REDUPLICATION IN THREE LANGUAGES: STANDARD INDONESIAN-MALAY, MALAYU PAPUA (PAPUAN MALAY) AND AMBAI
(A Case Study Of Phonology Micro Variation)

Sara Yulita Karubaba
sur-el: sarakarubaba@yahoo.com

English Literature Department
Faculty of Letters and Cultures University of Papua

Abstract

Standard Indonesian/Malay, *Melayu Papua* (*Papuan Malay)* and *Ambai* are Austronesian languages. Regarding Reduplication in three languages, it shows that reduplication occurs in noun, verb, adjective, adverb and numeral. The evidence shows that reduplication in numerals is only found in two languages; *Standard Indonesian/Malay* and *Papuan Malay.* Unlike *Standard Indonesian* and *Ambai*, *Papuan Malay* has three forms of reduplication: (1) full reduplication, (2) altered reduplication and (3) partial reduplication. As a result, reduplication of three languages shows that phonologically they differ in reduplication forms whereas in Optimality Theory (OT) analysis, these three languages have the same constraint; *FR>>Red=Ft*.

Keyword: reduplication, three languages, and phonology micro variation

Introduction

The general explanations of three Austronesian languages as follow; Donohue (2006) said that "Indonesian/Malay is an Austronesian language originally from what is now is Malaysia". Indeed, he stated that "the earliest records come from near modern Palembang, in the 7th century AD, from what was then the kingdom of Sriwijaya and it spread widely from this base trade from the 14th century onwards, give numerous to local varieties". Hence, "Today it is spoken natively by populations in eight countries, and is a national language of four, *Malaysi*a, *Singapura*, *Brunei* and *Indonesia* (Donohue, 2006)"

Besides, *Papuan Malay* is an Austronesian language and classified by Sawaki (2004 as cited in Ambarau 2016) as a member of Austronesia, Malayo –Polynesian, Western Malayo-Polynesian, Syndic, Malaya, Malay, Papuan Malay. Also, Papuan Malay is spoken as a first language of people belonging to every generation in two provinces in Papua (Karubaba, 2014). Moreover, *Papuan Malay* is divided into four varieties; *South Coast*, *Serui Malay*, *Bird's Head* and *North Papua*. In addition to the explanation of four varieties, the following examples of reduplication in *Papuan Malay* in the discussion below will be based on *Serui Malay* variety.

Furthermore, *Ambai* is "an Austronesian language of Papua, Indonesia, classified by Wurm-Hattori (1981) as a member of the South Halmahera West New Guinea subgroup of Eastern Malayo-Polynesian languages. Regarding the number of speakers, the language is spoken by nine to ten thousands people (Silzer & Clouse, 1991). The language is spoken, in different dialects, in several villages, such as *Ambai I*, *Ambai II*, *Baisore*, *Mambawi*, *Rondepi*, *Kawipi*, *Wamori*, *Aduwip*i, *Manawi*, *Atiri*, *Ransanoni*, *Roifi*, *Randawaya I*, *Randawaya II* and *Waita* (Karubaba, 2008). Also, *Ambai* is spoken in the larger towns in the province like *Seru*i, *Jayapura*, *Manokwari* and *Sorong*.

Finally, by considering reduplication of three languages, it can be observed that the languages are related in the sense that they are Austronesia languages, but phonologically they differ in reduplication forms. Then, this paper will present variations of reduplication in three languages and the different optimality theory analyses of them.

THEORETICAL CONTENT

The term *Reduplication* can be defined based on morphological and phonological view point (Kager, 1999). From morphological point of view, "reduplication is 'simply' a kind of affixation, both in its morpho-syntax contribution (it forms morphological categories, such as plural), and in its linear position with respect to the stem (preceding it, as a prefix, or following it, as a suffix), on the other hand from a phonological view point, the special property of reduplication is that reduplicative affix is not fully specified for segmental content. Its segmental is *copied* from the stem that undergoes reduplication. Reduplication is therefore by its very nature a phenomenon involving phonological identity between the 'reduplicant' and the' base' to which it adjoinds".

In addition to the explanation of 'reduplication' and 'base' above; McCarty and Prince (1994b) as cited Kager (1999) also defined the terms 'reduplicant' and 'base' are as follow; "the reduplicant is the string of segments that is the phonological realization of some reduplicative morpheme *RED*, which is phonologically empty whereas the 'base' is the output string of segments to which the reduplicant is attached. More specifically; for reduplicative prefixes, it is the following string of segments and for reduplicative suffixes, the preceding string of segments". Therefore, both definitions above show that 'reduplicant' and 'base' can be identify as the redulpicants tend to preserve phonological identity with the base.

Then, McCarthy and Prince 1994a, b, 1995a, forthcoming as cited in Kager (1999) stated that reduplication patterns can be seen through three constraint types based on Correspondece theory of reduplication as follow; (a) *well-formedness constraints*, encoding markedness principles, (b) *faithfulness constraints*, requiring lexical forms and surface forms to be identical, and (c) *base-reduplicant-identity constraints,* requiring identity between the reduplicant and its base. Another idea of constraint types is also presented by Stemberger and Bernhardt (1997) as follow; in *OT*, there are two types of rankable constraints; (1) *faithfulness* and (2) *output*. *Faithfulness* is the output must correspond to the input with respect <something> , while the *Output* may not contain <something> or must contain <something>. Similarly, McCarthy (2008) also presented two types of constraints, (1) *markedness constraints (Output*) and (2) *faithfulness constraints*. Apart from the explanation of constraint types, McCarthy (2008) defines the term *OT* as follow, "*OT* is a theory of how constraints interact with one another or *OT* supplies a framework for applying the constraints and evaluating the representations that are necessary part of any theory of syllable structure or phrase structure. Using the explanation above, the discussion of three languages below will be based on phonological view point.

More importantly, in this paper I will use the version of *Optimality Theory* developed in McMarcthy and Prince (1994) as cited in Kager (1999); particularly, using several constrains in analyzing *Optimality Theory* regarding reduplication in three languages. The several constrains are *Dependence (Dep)*, *Full Reduplication (FR*), *Red=FT, BR-ANCHOR-R*, *BR-CONTIG*, *NOCODA*. The following definition of each constraint as follow; (1) *Full Reduplication (FR)* is involving copying of a complete word ; (2) *BR-Anchor-R* means the left (right) peripheral element of R corresponds to the left (right) peripheral element of B, if R is to the left (right) of B; (3) *BR-CONTIG* is the portion of the base standing in correspondence forms a contiguous strings, as does the correspondent portion of the reduplicant; (4) *NoCODA* means syllables do not have codas ; (5) *Red=Ft* means the reduplication is a stem or foot.

Above all, this paper will present the variations of reduplication in three languages and the different optimality theory analyses of them.

Standard Indonesian/Malay

Reduplication in *Standard Malay/ Indonesian* has two forms; full reduplication and partial reduplication. Besides, in analyzing *Optimality Theory* there is also a discussion of partial reduplication in *Standard Indonesian* which is taken from De Lacy (2002). The examples of full reduplication and partial reduplication in *Standard Indonesian/ Malay* are illustrated below:

Full reduplication

Kager (1999) wrote that "in *Standard Indonesian/Malay*, segmental and prosodic identity of the reduplicant and the base is obvious in the case of total reduplication, which involves copying of a complete word". Reduplication in *Standard Indonesian/Malay* can be found in all word classes and numerals. The following examples of full reduplication are illustrated below.

a. Nouns

(1)	*anak*	'child'	*anak-anak*	'children'
	adik	'younger brother or sister'	*adik-adik*	' younger brothers or sisters
	teman	'friend'	*teman-teman*	'friends'
	bapak	'father'	*bapak-bapak*	' fathers'
	angan	'thought/idea'	*angan-angan*	'ideas/notions'
	wanita	'woman'	*wanita-wanita*	'women'
	orang	'person'	*orang-orang*	'people'
	ibu	'woman/mother	*ibu-ibu*	'women/mothers'
	rumah	'house'	*rumah-rumah*	'houses'
	kursi	'chair'	*kursi-kursi*	'chairs'
	gula	'sugar'	*gula-gula*	'candy'
	kata	'word'	*kata-kata*	'words'
	pagi	'morning'	*pagi-pagi*	'morning'
	masyarakat	'society'	*masyarakat-masyarakat*	'societies
	jari	'finger'	*jari-jari*	'fingers'

b. Verbs

(2)	*putus*	'broken/severed'	*putus-putus*	'broken/severed completely'
	pikir	'think'	*pikir-pikir*	'thinking'
	jalan	'road'	*jalan-jalan*	'walking/going'
	lari	'run'	*lari-lari*	'running'
	duduk	'sit'	*duduk-duduk*	'sitting'
	tikam	'stab'	*tikam-tikam*	'stab'
	tekan	'press'	*tekan-tekan*	'press'
	jilat	'lick'	*jilat-jilat*	'lick'
	ramal	'prophesy'	*ramal-ramal*	'prophesy'
	memuji	'glory'	*memuji-muji*	'glorify'
	menari	'dance'	*menari-nari*	'dancing'
	melekat	'stick'	*melekat-lekat*	'stick'

c. Adverbs

(3)	*lembek*	'soft'	*lembek-lembek*	'sofly'
	cepat	'quick'	*cepat-cepat*	'quickly'
	pelan	'slow'	*pelan-pelan*	'slowly'
	lambat	'slow'	*lambat-lambat*	'slowly'

d. Adjectives

(4)	*wangi*	'scent'	*wangi-wangi*	'scents'
	marah	'angry'	*marah-marah*	'angry'

e. Numerals

(5)	*satu*	'one'	*satu-satu*	'each of one'
	dua	'two'	*dua-dua*	'each of two', etc.

OPTIMALITY THEORY ANALYSES

Reduplication in *Standard Malay/Indonesian* has three constraint rankings. One is Dep>>FR>>Red=FT. Another is FR>>Red=FT. The other is BR-ANCHOR-R>>BR-CONTIG>>NOCODA. Firstly, I will discuss the reduplication of a monosyllabic stem and following by a disyllabic stem and a trisyllabic stem.

Reduplication of a monosyllabic stem.

In this table, the reduplicant is a monosyllabic unit. It is copied of the base form or copied the sequences of CVV. This ranking is Dep>>FR>>Red=FT. It is illustrated in table (1).

Table 1:

Input:RED+ kau/	Dep	FR	Red=FT
a. ☞kau-kau			*
b. ka-kau		*	*
c. kauka-kau	*!	*	

Candidate (1c) inserted input segments, fatally violating *Dep*. The reason of violates in *Dep* because it is "anti-epenthesis" constraint, militating against any segments in the output which have no correspondents in the input. *Dep* requires segments of reduplicant must have correspondents in the base (Every element of *R* has a correspondent in *B*). Monosyllabic reduplication in (1c) of *Red=Ft* is optimal, but it violated in *FR*. Candidate (1b) is satisfied in *Dep* because the reduplicant corresponds to the base or every element of *R* has a correspondent in *B*. Candidate (1b) fails in *Red=Ft* and violates in *FR*. Therefore, a monosyllabic reduplication (1a) is the winner or is optimal for *Dep*. It is optimal because output segments have corresponded to input segments. It is satisfied in *FR* even though it has violated in *Red=Ft*.

Reduplication of a disyllabic stem

Table (2) shows reduplication of a disyllabic stem. Reduplication of disyllabic is total reduplication. From the table below, we can analysis that the ranking of a disyllabic reduplication is *FR>>Red=Ft*.

Table 2:

Input:RED+ anak/	FR	Red=Ft
a. ☞anak- anak		* *
b. ana-anak	*	*

Candidate (1b) deletes input segments, fatally violating in *FR* and *Red=Ft*. Candidate (1a) is optimal. Even though, it violates twice in *Red=Ft*, It is optimal or the winner is full reduplication.

Reduplication of a trisyllabic stem

Table (3) shows reduplication of a trisyllabic stem. Reduplication of trisyllabic is a total reduplication. The ranking is *FR>>Red=Ft*.

Table 3:

Input: RED+wanita/	FR	RED=FT
a. ☞wanita-wanita		*
b. wani - wanita	*	
c. wa - wanita	*	*

A monosyllabic reduplicant (3c) fails in *FR* and in *Red=Ft*. Reduplication of a disyllabic stem in (3b) is failed in FR, but it is satisfied in Red=Ft. Candidate (1a) is the winner or is optimal because it is presenting FR whereas it is violated in Red=Ft.

Table (4) shows reduplication of three syllables is a based form or a stem. This phenomenon shows that Reduplication in *Standard Indonesian* is partial reduplication. The reduplicant is a disyllabic unit, specifically a binary foot; it is copy of the second and third syllables of the base. This is shown in (4b), where reduplicant [*muji-*] is optimal to match the second and third syllables of the base. The ranking for this reduplication is *Red=Ft >>FR*.

Table 4

Input:RED + memuji/	RED=FT	FR
a. memuji-memuji	*	
b. ☞memuji - muji		*
c. memu -memuj	*	*
d. me - memuiji	*	*

Candidate (4a) presents reduplication of the basic form, fatally violating *Red=Ft* because it takes the stem or the base. And candidate (4c) is fatally violating in both candidate *Red=Ft* and *FR* because both *Red=Ft* and *FR* do not match in the third syllable of the base. In (4d) it is fatally violating in *Red=Ft* and *FR=Ft* because both candidates take first syllable of the base or do not match the second and third syllable of the base.

In order to support my data analysis of partial reduplication above, I will also include partial reduplication in *Standard Indonesian/Malay* which is given by De Lacy (2002) that is presented in this part. In particular, he showed that a partial reduplication in *Standard Indonesian/Malay* is a disyllabic stem. The example below is reduplication of a disyllabic stem.

Reduplication of a Disyllabic Stem

De Lacy (2002) said that the reduplicants both aim to copy the right most consonant. This is evident with the partial reduplicant in the form [kaŋkawan]: the reduplicant copies the stem-final [n] (subsequently assimilating it). *BR-ANCHOR-R* requires the right most base element to have correspondent in reduplicant. It must outrank requirements on contiguity in the base (*BR-CONTIGUTY*), otherwise the reduplicated must also outrank the markedness constraint *NOCODA*, which would favour *[kakawan] over [kaŋkawan]. The table below shows reduplication of a disyllabic stem. The ranking for reduplication of disyllabic is *BR-ANCHOR-R>>BR-CONTIG>>NOCODA.*

Table 4

/RED+ kawan/	BR-ANCHOR-R	BR-CONTIG	NOCODA
(a) kawkawan	*!		**
(b) kakawan	*!		*
(c) kaŋkawan		*	*

However, reduplication of the stem-final consonant-consequently violating *BR-ANCHOR-R* is blocked when the coda is not a nasal or a stop.

Therefore, candidate (4c) is optimal or the winner for *BR-ANCHOR-R* because copy the right most consonant and the coda is a nasal. It is violated in *BR-CONTIG* because three segments stand in correspondence, [kaŋ], do not form a contiguous substring of base and reduplicant. And candidate (4c) is also violated in *NOCODA*. Candidate (4b) is failed in *BR-ANCHCOR-R* because the right most consonant and coda is not a nasal or a stop. Candidate (4b) fails in *NOCODA*, while it satisfied in *BR-CONTIG* because two segments stand in correspondence, [ka], form a contiguous substring of both base and reduplicant.

Candidate (4a) is fatally violating in *BR-ANCHOR-R* because the right most consonant and coda is not a nasal or a stop and also it fails in *NOCODA*. It is satisfied in *BR-CONTIG* because the three segments that stand in correspondence, [kaw], form a contiguous substring of both base and reduplicant.

Papuan Malay

Reduplication in *Papuan Malay* has three forms; full reduplication, altered reduplication and partial reduplication. The following examples are illustrated below:

Full reduplication

In *Papuan Malay* full reduplication or total reduplication involves copying of a complete word. Reduplication in *Papuan Malay* can be found in all word classes and numerals. The following examples of full reduplication are illustrated below.

a. Nouns

falu-falu	'scoop' (used for water on the boat or canoe)
tangga-tangga	'step' (made from wood)
naju-naju	'stick' (of wood and used on the boat)
nona-nona	'girls'
nyora-nyora	'teacher's wife '
lante-lante	'floor' (of palm stick)
gaba-gaba	'wall' (of sago-palm leaves)
mama-mama	'mothers'
gata-gata	'pincers' (a stick of palm and used in the kitchen for fire)
gata-gata	'pincers' (of sago-palms leaves and used for eating sago pudding)
timba-timba	'scoop' (used in the kitchen for water)
bale-bale	'spoon' (of wood and used to prepare sago porridge)
kore-kore	'spoon' (of wood and used to prepare sago porridge)
kore-kore	'pincers' (a stick of palm and used in the kitchen for fire)
tapis-tapis	'filter' (used to prepare sago porridge)
Prau-prau	'boats or canoe'
para-para	'rack (of wood and used in the kitchen for put wood that use to make fire)
para-para	'porch' (of wood and palm)
aya-aya	'filter' (used for sago)
lai-lai	'net' (used to catch tiny sea fish)
sero-sero	'net' (of bamboo and large stationary fish trap)
tumbu-tumbu	'pestle or mortar' (of stone and used in the kitchen)
goso-goso	'rub' (of coconut, bamboo leaves , and of coral and used to clean cooking pot)
goso-goso	' rub' (of nylon and used to clean boat or canoe)
angka-angka	' napkin (used in the kitchen to lift)
tubir-tubir	'depth'
kipas-kipas	' fan ' (of palm and used in the kitchen for fire)
dabu-dabu	'dish'
colo-colo	'dish'
kole-kole	'canoe'
lap-lap	'wipe or towel' (used in the kitchen)
loso-loso	'bamboo'
jiku-jiku	'corner of the house'
ana-ana	'children'
gae-gae	'hook' (long bamboo pole used to pluck fruits)
gae-gae	'hanger' (of iron and used for clothing)
gepe-gepe	'pincers' (of bamboo and used for clothing)
gepe-gepe	'pincers' (of bamboo or wood and used in the farm)
gepe-gepe	'pincers' (of iron and used in the hair)
guna-guna	'magic'
tomi-tomi	'cherry -like fruit'
kum-kum	'bird'
bua-bua	'fruits'
gete-gete	' fish'
soa-soa	'lizards'
mani-mani	'(glittering) bead'
kole-kole	'dug-out canoe
nao-nao	'taciturn (idiotic)'

b. Verbs

buang-buang	'to catch fish' (used net)
buang-buang	'to catch fish (used nylon)

tunda-tunda	‘to catch fish (used motor boat)
toki-toki	to tap or pound at (used hammer or stone or wood)
pica-pica	‘breakers’ (of wave)
tum-tum	‘dive ‘
mandi-mandi	‘swim’
molo-molo	‘to catch fish (used traditional weapon)
kete-kete	‘to eat (by fish and prepare to catch it)
cigi-cigi	‘fishing (used nylon)
cege-cege	‘to row’ (used traditional boat for competition or anniversary new year)
mandi-mandi	‘picnic’ (in the island)
putar-putar	‘go around (used motor boat)
putar-putar	‘complaint’
mou-mou	‘dumb’
gara-gara	‘mock’
terek-terek	‘mock’
ganggu-ganggu	‘mock’
lia-lia	‘to see’
pake-pake	‘to have magic’
jatu-jatu	‘fall’
baca-baca	‘to practice black magic
tapela-tapela	‘breaks (but not into peaches)
mimis-mimis	‘chewing or swallow (for candy) ?
tabala-tabala	‘breaks (for wood and plate)
maki-maki	‘abuse’

c. Adjectives

rata-rata	‘full ‘ (water)
bae-bae	‘fine’
besar-besar	‘big’
sediki-sediki	‘litle’

d. Adverbs

palang-palang/plan-plan	‘slowly’
lama-lama	‘slowly’
jao-jao	‘far ‘
lombo-lombo	‘sofly’(very)

e. Numerals

satu-satu	‘each one’ ‘
dua-dua	‘both, each of the two’
tiga-tiga	‘all three, each of the three’

Altered Reduplication

Altered reduplication is also found in *Papuan Malay*. Altered reduplication-in which variation of vowels indicates variety. The following examples are presented below.

bola-bale	‘repeatedly, time and time again.
duk-dak	‘frightened; excited’
mondar-mandir	‘go there and back again’ (continually)

Partial Reduplication

Partial reduplication also occurs in *Papuan Malay*. Partial reduplication copies only part of the segments of the base. Some examples occur as prefix and one example occurs as suffix. The following examples are presented below.

a. Prefix

dab-dabu	'dish'
tom-tomi	'cherry-like fruit'.
lak-laki	'man; male'
mo-mou	'dumb'
sat-satu	'each of one'
kec-kecil	'small'(very)
ma-masa	'to cook'
ma-maki	'abuse'

b. Suffix

aya-ya	'filter'(used for sago)

Optimality Theory Analysis

Reduplication of a disyllabic stem

Table (5) shows reduplication of a disyllabic stem. Reduplication of a disyllabic stem is a total reduplication. The ranking for this is *FR>>Red=Ft*.

Table 5

Input : RED+para/	FR	Red=Ft
a. ☞ para-para		
b. par-para	*	*

Candidate (5b) is violating in *FR* and in *Red=Ft*. In (5a), the candidate is optimal or is the winner because it presents *FR* and *Red=Ft*.

Table (6) and table (7) also show reduplication of a disyllabic stem. Reduplication of a disyllabic stem is a total reduplication. Table (6) and (table (7) show that the ranking for this is *FR>>Red=Ft*.

Table 6

Input : RED+gata/	FR	Red=Ft
a. ☞ gata-gata		
b. gat-gata	*	*

Table 7

Input : RED+gaba/	FR	Red=Ft
a. ☞ gaba-gaba		
b. gab-gaba	*	*

Both Candidates (2b) in table (6) and (2b) in table (7) above are violating in *FR* and in *Red=Ft*. In (2a) in table (6) and (2a) in table (7), the candidates are optimal or are the winner because they present *FR* and *Red=Ft*.

Reduplication of a monosyllabic stem

In the table below, the reduplicant is a monosyllabic stem. It is copied from base forms or copies the sequences of CVV. This ranking is *Dep>>FR>>Red=FT*.

Table 8

Input: RED+jau/	Dep	FR	Red=Ft
a. ☞jau-jau			*
b. ja-jau		*	*
c. jauja-jau	*!	*	

Candidate (8c) inserted input segments, fatally violating *Dep*. *Dep* violates because *Dep* is the 'anti-epenthesis' constraint, militating against any segments in the output which have no correspondents in the

input. *Dep* requires that segments in the reduplicant must have correspondents in the base (Every element of R has a correspondent in B). A monosyllabic reduplication in (8c) for *Red=Ft* is optimal, but it is violated in *FR*. Candidate (8b) is satisfied in *Dep* because the reduplicant corresponds in the base or every element of *R* has a correspondent in *B*. Candidate (8b) fails in *Red=Ft* and violatates in *FR*. Candidate (8a) is optimal or presented the reduplication. It has violated in *Red=Ft*. Thus, monosyllabic reduplication (8a) is the winner for *Dep* because the segments in the output have corresponded in the input. It is satisfied in *FR*, but it has also violated in *Red=Ft*.

In the table (9) below, it shows that the reduplicant is also a monosyllabic stem. It is copied from base forms or copies the sequences of CVV. This ranking is *Dep>>FR>>Red=FT*.

Table 9

Input: RED+nao/	Dep	FR	Red=Ft
a. ☞nao-nao			*
b. na-nao		*	*
c. naona-nao	*!	*	

Candidate (9c) also inserted input segments, fatally violating *Dep*. *Dep* violates because *Dep* is the 'anti-epenthesis' constraint, militating against any segments in the output which have no correspondents in the input. *Dep* requires that segments in the reduplicant must have correspondents in the base (Every element of R has a correspondent in B). A monosyllabic reduplication in (9c) for *Red=Ft* is optimal, but it is violated in *FR*. Candidate (9b) is satisfied in *Dep* because the reduplicant corresponds in the base or every element of *R* has a correspondent in *B*. Candidate (9b) fails in *Red=Ft* and violatates in *FR*. Candidate (9a) is optimal or presented the reduplication. It has violated in *Red=Ft*. Thus, monosyllabic reduplication (9a) is also the winner for *Dep* because the segments in the output have corresponded in the input. It is satisfied in *FR*, but it has also violated in *Red=Ft*.

Ambai

Reduplication

Karubaba (2008) said that Reduplication in *Ambai* has two forms; full reduplication and partial reduplication. The following examples are illustrated below:

Full reduplication of nouns

Full reduplication of nouns is the segmental of the reduplicant copying a complete word of the base. Thus, reduplication of nouns in *Ambai* is the total reduplication which is the segment of the reduplicant matches or corresponds to the base. The full reduplication of nouns is a disyllabic unit.

The examples below show that full reduplication of nouns does not include plural forms. By pluralizing, the plural form is placed it after the reduplication is formed. Moreover, all the base forms of the examples below do not have their own independent meaning. Therefore, to get the meaning the reduplicant and the base form must join together. Exceptionally, the words 'daru and bui', it shows its own way because it can stand alone to form a meaning of the base.

(23) *daru-daru* 'fork of sago pudding'
more-more 'porcelain or earthenware jug'
resa-resa 'big and round plate'
bui-bui 'jug'
nahi-nahi 'tree similar to jackfruit'
kaming-kaming 'bump/lump'

Partial reduplication of nouns

Ambai has a reduplication process that copies only part of the segments base, which is know as partial reduplication. All base forms of the examples below do not have their own independent meaning. Therefore, to get the meaning the reduplicant and the base form must join together. The following examples are listed below.

kowo-kowoai	'bird'
furu-furuyai	'fish'
tombo-tomboai	'bird similar to egret'

Partial reduplication of verbs

This reduplication takes the first two syllable of the root. Partial reduplication of the verb is a dysllabic unit. The four or five segments of the reduplicant stand in corresponding to the base. Partial reduplication of the verbs has a different meaning from the base, which is meant 'totally effect'.

(24)	*fituayai* 'soft'	*fitu-fituayai*	'soft' (totally effect)
	fatamai 'soft'	*fata-fatamai*	'slow' (totally effect)
	futuayai'severed	*futu-futuayai*	'severe' (totally effect)
	tirehi'spilled	*tire-tirehinai*	'spill' (totally effect)
	pondoai'sound'	*pondo-pondoai*	'sounds' (totally effect)

Partial reduplication of adjectives

Partial reduplication of adjective is a disyllabic unit. The three or four segments of the reduplicant stand in corresponding, or they form a contiguous substring of both base and reduplicant. The reduplication takes the first two syllable of the base or root. The following examples are listed below.

(23)	*biru-biruayai*	'completely fall'
	biri-biriayai	'completely fertile'
	kiti-kitiai	'the sound which almost unheard/completely unheard'
	siri-siriayai	'completely gleam/beam'
	mei-meiwai	'completely enough'

Optimality Theory Analysis

Reduplication of a disyllabic unit

Table (10) shows reduplication of four syllables is a based form or a stem. This phenomenon shows that Reduplication in *Ambai* is partial reduplication. The reduplicant is a disyllabic unit, specifically a binary foot; it is copy of the first two syllables of the base. This is shown in (10b), where reduplicant [*fitu-]* is optimal to match the first two syllable of the base. The ranking for this reduplication is *Red=Ft >>FR*.

Table 10

Input:RED + fituayai/	RED=FT	FR
a. fituaiyai-fuituayai	*	
b. ☞fitu - fituayai		*
c. fitua -fituaya	*	*
d. fi - fituaiyai	*	*

Candidate (10a) presents reduplication of the basic form, fatally violating *Red=Ft* because it takes the stem or the base. And candidate (10c) is fatally violating in both candidate *Red=Ft* and *FR* because both *Red=Ft* and *FR* do not match in the first two syllable of the base. In (10d) it is fatally violating in *Red=Ft and FR=Ft* because both candidates take first syllable of the base or do not match the first two syllable of the base.

Reduplication of a disyllabic stem

Table (11) shows reduplication of a disyllabic stem. Reduplication of disyllabic is total reduplication. From the table below we can analysis that the ranking disyllabic reduplication is *Red=Ft >>FR*.

Table 11

Input : RED+more/	Red=Ft	FR
a. ☞ more - more		
b. mo - more	*	*

Candidate (11b) is violating in *FR*, but it is satisfying *Red=Ft* because reduplicants do not match to the base form. Both candidates in (11a) are optimal or present *Red=Ft and FR*.

Table (12) and Table (13) also show reduplication of a disyllabic stem. Reduplication of disyllabic is total reduplication. From both tables below we can analysis that the ranking disyllabic reduplication is *Red=Ft >>FR*.

Table 12

Input : RED+daru/	Red=Ft	FR
a. ☞ daru - daru		
b. da - daru	*	*

Table 13

Input : RED+nahi/	Red=Ft	FR
a. ☞ nahi - nahi		
b. na - nahi	*	*

Candidate (12b) in the table (12) and candidate (13b) in the table (13) above are violating in *FR*, but they are satisfying *Red=Ft* because reduplicants do not match to the base form. Both candidates in (12a) in the table (12) and (13a) in the table (13) are optimal or present *Red=Ft* and *FR*.

CONCLUSION

Standard Indonesian/Malay, *Papuan Malay* and *Ambai* are Austronesian languages. As a result, Reduplication in three languages occurred in noun, verb, adjective and adverb. The evidence above showed that reduplication in numerals is only found in both languages; *Standard Indonesian/Malay* and *Papuan Malay*. Unlike both languages (*Standard Indonesian* and *Ambai*), *Papuan Malay* has three forms of reduplication; full reduplication, altered reduplication and partial reduplication. In addition to Optimality Theory (OT) analysis, these three languages have the same constraint. The constraint is *FR>>Red=Ft*.

REFERENCES

Ambarau, H.H. 2016. *Serial verb construction in Papauan Malay*. Skripsi. Sarjana Sastra. Faculty of letter, The University of Papua.

De Lacy, P.V. 2002. *The Formal Expression of Markedness*. PhD Thesis. Massachusetts University.

Kager, R. 1999. Optimality Theory. Cambridge: Cambridge University Press.

Karubaba, S.Y. 2008. *Ambai Inflectional and Derivational Morphology*. Thesis. Leiden University. The Netherlands.

McCarthy, J. J. 2008. *Doing Optimality Theory. Applying Theory to Data*. Blackwell Publishing. UK.

Stemberger, J.P., & Bernhardt, B.H. 1997. *Optimality Theory*. In M. Ball & R. Kent (Eds.) The new phonologies (pp.211-245). San Diego, CA: Singular Publishing Group.